

Amendment to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A pharmaceutical composition comprising solid microparticles of an agent encapsulated in a matrix comprising lipid, protein, and sugar.
2. (Currently Amended) A pharmaceutical composition comprising solid microparticles of an agent encapsulated in a matrix, wherein the matrix comprises at least three components selected from the group consisting of lipid, protein, sugar, and synthetic polymer.
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Currently Amended) A pharmaceutical composition comprising solid microparticles of an agent encapsulated in a matrix comprising protein and sugar.
7. (Original) The pharmaceutical composition of claim 1 wherein the agent is a therapeutic agent.

8. (Original) The pharmaceutical composition of claim 1 wherein the agent is a local anesthetic.
9. (Original) The pharmaceutical composition of claim 1 wherein the agent is selected from the group consisting of procaine, lidocaine, dibucaine, tetracaine, bupivacaine, mepivacaine, and articaine.
10. (Original) The pharmaceutical composition of claim 1 wherein the agent is bupivacaine.
11. (Original) The pharmaceutical composition of claim 1 wherein the agent is an anticonvulsant.
12. (Original) The pharmaceutical composition of claim 1 wherein the agent is a vasodilator.
13. (Original) The pharmaceutical composition of claim 1 wherein the agent is a protein.
14. (Original) The pharmaceutical composition of claim 1 wherein the agent is a lipid.
15. (Original) The pharmaceutical composition of claim 1 wherein the agent is a glycosaminoglycan.

16. (Original) The pharmaceutical composition of claim 1 wherein the agent is a diagnostic agent.
17. (Original) The pharmaceutical composition of claim 1 wherein the agent is a prophylactic agent.
18. (Original) The pharmaceutical composition of claim 1 wherein the lipid is a naturally occurring lipid.
21. (Original) The pharmaceutical composition of claim 1 wherein the lipid is an emulsifier.
20. (Original) The pharmaceutical composition of claim 1 wherein the lipid is a surfactant.
21. (Original) The pharmaceutical composition of claim 1 wherein the lipid is positively charged.
22. (Original) The pharmaceutical composition of claim 1 wherein the lipid is negatively charged.
23. (Original) The pharmaceutical composition of claim 1 wherein the lipid has no charge.

24. (Original) The pharmaceutical composition of claim 1 wherein the lipid is a phosphatidylcholine.

25. (Original) The pharmaceutical composition of claim 1 wherein the lipid is dipalmitoylphosphatidylcholine (DPPC).

26. (Original) The pharmaceutical composition of claim 1 wherein the lipid is polyvinyl alcohol.

27. (Original) The pharmaceutical composition of claim 1 wherein the lipid is a phospholipid.

28. (Currently Amended) The pharmaceutical composition of claim 1 wherein the lipid is selected from the groups consisting of phosphoglycerides; phosphatidylcholines; dipalmitoyl phosphatidylcholine (DPPC); dioleoylphosphatidyl ethanolamine (DOPE); dioleyloxypropyltriethylammonium (DOTMA); dioleoylphosphatidylcholine; cholesterol; cholesterol ester; diacylglycerol; diacylglycerolsuccinate; diphosphatidyl glycerol (DPPG); hexanedecanol; fatty alcohols; [such as] polyethylene glycol (PEG); polyoxyethylene-9-lauryl ether; a surface active fatty acid; [, such as] palmitic acid; [or] oleic acid; fatty acids; fatty acid amides; sorbitan trioleate (Span 85) glycocholate; surfactin; a poloxomer; a sorbitan fatty acid ester; [such as] sorbitan trioleate; lecithin; lysolecithin; phosphatidylserine; phosphatidylinositol; sphingomyelin; phosphatidylethanolamine (cephalin); cardiolipin; phosphatidic acid;

cerebrosides; dicetylphosphate; dipalmitoylphosphatidylglycerol; stearylamine; dodecylamine; hexadecyl-amine; acetyl palmitate; glycerol ricinoleate; hexadecyl sterate; isopropyl myristate; tyloxapol; poly(ethylene glycol)5000-phosphatidylethanolamine; and phospholipids.

29. (Original) The pharmaceutical composition of claim 1 wherein the lipid is a derivatized lipid.

30. (Original) The pharmaceutical composition of claim 1 wherein the protein is an albumin.

31. (Original) The pharmaceutical composition of claim 1 wherein the protein is a whole cell extract.

32. (Original) The pharmaceutical composition of claim 1 wherein the protein is an antibody.

33. (Original) The pharmaceutical composition of claim 1 wherein the protein is an enzyme.

34. (Original) The pharmaceutical composition of claim 1 wherein the protein is glucose oxidase.

35. (Original) The pharmaceutical composition of claim 1 wherein the protein is insulin.

36. (Original) The pharmaceutical composition of claim 1 wherein the sugar comprises a mixture of complex and simple sugars.

37. (Original) The pharmaceutical composition of claim 1 wherein the sugar is lactose.

38. (Original) The pharmaceutical composition of claim 1 wherein the sugar is cellulose.

39. (Original) The pharmaceutical composition of claim 1 wherein the sugar is a chemically modified sugar.

ai 40. (Original) The pharmaceutical composition of claim 1 wherein the sugar is a glycosaminoglycan.

41. (Original) The pharmaceutical composition of claim 1 wherein the sugar is dextran.

42. (Original) The pharmaceutical composition of claim 1 wherein the sugar is a chemically modified dextran.

43. (Original) The pharmaceutical composition of claim 1 wherein the sugar is chondroitin sulfate.

44. (Original) The pharmaceutical composition of claim 1 wherein the sugar is a derivatized sugar.

45. (Original) The pharmaceutical composition of claim 1 wherein the sugar is a chemically modified sugar.

46. (Original) The pharmaceutical composition of claim 1 wherein the sugar is selected from the group consisting of galactose, lactose, glucose, maltose, starches, cellulose and its derivatives, methyl cellulose, carboxymethyl cellulose, fructose, dextran and its derivatives, raffinose, mannitol, xylose, dextrans, glycosaminoglycans, sialic acid, chitosan, hyaluronic acid, and chondroitin sulfate.

47. (Original) The pharmaceutical composition of claim 1 wherein the ratio of lipid to protein to sugar is approximately 3:1:1.

48. (Original) The pharmaceutical composition of claim 1 wherein the lipid comprises 0-99% of the matrix by weight.

49. (Original) The pharmaceutical composition of claim 1 wherein the lipid comprises 3-99% of the matrix by weight.

50. (Original) The pharmaceutical composition of claim 1 wherein the lipid comprises 20-60% of the matrix by weight.

51. (Original) The pharmaceutical composition of claim 1 wherein the protein comprises 0-95% of the matrix by weight.

52. (Original) The pharmaceutical composition of claim 1 wherein the protein comprises 10-30% of the matrix by weight.

53. (Original) The pharmaceutical composition of claim 1 wherein the protein comprises 1-20% of the matrix by weight.

ai 54. (Original) The pharmaceutical composition of claim 1 wherein the sugar comprises 0-60% of the matrix by weight.

55. (Original) The pharmaceutical composition of claim 1 wherein the sugar comprises 0.5%-50% of the matrix by weight.

56. (Original) The pharmaceutical composition of claim 1 wherein the sugar comprises 10-30% of the matrix by weight.

57. (Original) The pharmaceutical composition of claim 1 wherein the microparticles are less than 50 micrometers in diameter.

58. (Original) The pharmaceutical composition of claim 1 wherein the microparticles are less than 10 micrometers in diameter.

59. (Original) The pharmaceutical composition of claim 1 wherein the microparticles are less than 5 micrometers in diameter.

60. (Original) The pharmaceutical composition of claim 1 wherein the microparticles are less than 1 micrometer in diameter.

61. (Original) The pharmaceutical composition of claim 1 wherein the microparticles are less than 500 nanometers in diameter.

62. (Original) A method of preparing microparticles comprising an agent encapsulated in a lipid-protein-sugar matrix, the method comprising steps of:

providing an agent;
contacting the agent with a lipid, a protein, and a sugar; and
spray drying mixture of the agent, the lipid, the protein, and the sugar to make microparticles.

63. (Original) A method of administering an agent, the method comprising steps of:
providing a patient;
providing microparticles of an agent encapsulated in a lipid-protein-sugar matrix; and
administering the microparticles to the patient.

64. (Original) The method of claim 63 wherein the step of administering comprises injecting the microparticles into the patient.

65. (Original) The method of claim 63 wherein the step of administering comprises placing the microparticles in a body cavity of the patient.

66. (Canceled)

ai 67. (Canceled)

68. (Canceled)

69. (Canceled)

70. (Canceled)

71. (Canceled)

72. (Canceled)

73. (Canceled)

74. (Canceled)

75. (Canceled)

76. (Canceled)

77. (Canceled)

78. (Canceled)

79. (Canceled)

ai 80. (New) The pharmaceutical composition of claim 1 wherein the microparticles range from 3 microns to 5 microns in diameter.

81. (New) The pharmaceutical composition of claim 2 wherein the matrix comprises a lipid, a protein, a sugar, and a synthetic polymer.

82. (New) A pharmaceutical composition comprising solid microparticles of an agent encapsulated in a matrix comprising protein and synthetic polymer.

83. (New) A pharmaceutical composition comprising solid microparticles of an agent encapsulated in a matrix comprising sugar and synthetic polymer.

84. (New) The pharmaceutical composition of claim 1, 2, or 6, wherein the microparticles are prepared by spray drying.

85. (New) A solid microparticle comprising an agent encapsulated in a matrix comprising lipid, protein, and sugar, whereby the microparticle is prepared by spray drying.